



## Disclosure END8-2003-0065

Prepared for and/or by an IBM Attorney - IBM Confidential

Created By Vyacheslav Barsuk On 05/07/2003 01:43:12 PM MDT  
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Required fields are marked with the asterisk (\*) and must be filled in to complete the form.

**\* Title of disclosure (in English)**

Remote power reset of AIX (UNIX) servers through network connection

## Summary

Status	Final Decision (File)
Final deadline	
Final deadline reason	
Docket family	END9-2003-0054
Original location	BLD
* Processing location	Endicott
* Functional area	(Larry Longseth) Global Services-Boulder
Attorney/Patent professional	Arthur Samodovitz/Endicott/IBM
Invention development team (IDT)	Geni Peper/Boulder/IBM Patrick Wong/San Jose/IBM Donald Schaefer/Boulder/IBM
Submitted date	05/07/2003 04:27:37 PM MDT
* Owning division	GS
* Line of business	INT - IBM Internal Support Primary Inventor's Line of Business (LoB)
Incentive program	
Lab	LONGSETH
* Technology code	674
Patent value tool (PVT) score	57

## Inventors with a Blue Pages entry

Inventors: Vyacheslav Barsuk/Boulder/IBM

Inventor Name	Inventor Serial	DIV/Dept	Inventor Phone	Manager Name
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> donotes primary contact				

## Inventors without a Blue Pages entry

## Invention Development Team Information

Attorney/Patent professional	Arthur Samodovitz/Endicott/IBM
Invention development team (IDT)	Geni Peper/Boulder/IBM Patrick Wong/San Jose/IBM Donald Schaefer/Boulder/IBM
Response due to IP&L	06/09/2003

## Main Idea



**Main Idea for Disclosure END8-2003-0065**  
Prepared for and/or by an IBM Attorney - IBM Confidential  
Archived On 06/11/2003 01:30:27 AM

**Title of disclosure (in English)**

Remote power reset of AIX (UNIX) servers through network connection

**Main Idea**

1. Background: What is the problem solved by your invention? Describe known solutions to this problem (if any). What are the drawbacks of such known solutions, or why is an additional solution required? Cite any relevant technical documents or references.

It is applicable to UNIX servers. When server runs out of virtual memory because of application memory consumption, server hangs. It is impossible to login into affected server. Only way to bring server back is to reboot via resetting power. It becomes a huge problem in case of remotely located servers. To reset power remotely, additional hardware required or server should have built in hardware features - like certain models of IBM pseries servers. In both cases installation of additional communication equipment required.

2. Summary of Invention: Briefly describe the core idea of your invention (saving the details for questions #3 below). Describe the advantage(s) of using your invention instead of the known solutions described above.

There is a way to perform remote power reset of hanged server through existing tcp/ip network connection. It doesn't require any additional hardware and compatible with wide range of unix servers. Power reset performs via software.

3. Description: Describe how your invention works, and how it could be implemented, using text, diagrams and flow charts as appropriate.

When server hangs as result of running out of virtual memory, operating system can't launch any new processes, but it is not completely dead.

Server responds to tcpip ping. Existing processes, which don't require new system resources will work. If there is a process, with very small memory requirements and pinned to memory, it survives. This process should listen to specific tcp/ip port.

When server hangs, it is possible to send specific tcp packet to hanged server from another server connected to the same network.

Described above process will receive this packet and performs system call in order to reboot or power off server.

Solution was tested on different models of IBM RS/6000 pseries servers running AIX V4.3/5.1 and proved its functionality.

There is a reason to believe that solution will work with other unix servers like linux

To view the Main Idea of this disclosure, open the "Main Idea" document from the view  
\*Inventor Questions

\* 1. Select the single most appropriate technology category for your invention from the following technologies list.

(674) Tech Tag 600 Software/Services/ Applications/Solutions-674 Other Software Access Comments

Are there any additional significant markets where the invention is likely to have Impact?

Yes  No

If yes, please identify them:

\* 2. Have you implemented the invention (e.g., made a prototype) or otherwise shown that it is workable?

Yes  No

If Yes, then what date

\* 3. Has the subject matter of the invention or a product incorporating the invention been offered for sale, or is it likely to be offered for sale, as part of an IBM product or service?

No known product plans within 2 years

Maybe; GA 1-2 years away

Yes; GA within 3-12 months

Yes; GA within 3 months

Yes; product has been announced

\* 4. Has the invention been commercially used (internally or externally) by IBM or another entity (for example, included in or used to make products, or prototypes provided to a customer)?

Yes  No

If Yes, please tell us the prototype/product, and when the use first started or is scheduled to start:  
Prototype/Product

There are two programs - server part, which listens to request and performs power reset and client part

- which sends request to reset power.

Date: March, 2003

\* 5. In what type of product might a competitor include the invention?

unix type operating systems

\* What competitor(s) (Indicate home country of such competitors if not United States)?  
N/A

\* 6. How easily can the use of the invention by a third party be detected?

Undetectable; third party must admit use for IBM to know

Difficult; e.g.; with reverse engineering or examination of available code

With work; e.g.; using test cases; but not reverse engineering

Easily; by running & viewing product operation

Trivially; without purchase of product; e.g.; by reading product literature

\* 7. Is the invention applicable to an Information Technology standard such as those likely to be developed by organizations such as the IETF, W3C, Oasis, ISO, IED or ITU?

Yes  No

If Yes, what organization (if you know) and which standard?

and Is IBM participating in the development or usage of the standard?  Yes  No

To review the Information Technology standards IBM is participating in, go to

<http://w3.ibm.com/standards>

\* 8. Have you, or any of the other inventors, submitted this same invention disclosure or a similar invention disclosure previously?

Yes  No

If Yes, please provide the disclosure number:

\* 9. Please list the invention disclosures (previously submitted or about to be submitted), products, patents, or publications that you and the other inventors feel are the most relevant to your invention (for example, pertaining to the problem you are solving, including other solutions to the problem), be they from you or anyone else, or if not applicable, enter "None":  
None

\* 10. Was the invention made in the course of any activity that involved any other party, be it

• The government

Yes  No

This invention disclosure has been verified to be covered by a government contract. If you feel changes are required to this information, contact the IP location handling this invention disclosure.

If you check "Yes" for this question, you will be prompted to provide the following information

- contract number
- which country's government is issuing the contract
- division holding the contract
- government agency issuing the prime contract
- government program (if known)

• A customer  
(such as RFQ, IGS engagement)

Yes  No

If yes, describe the activity

• A non-IBM development partner  
(such as joint development activities)

Yes  No

If yes, describe the activity

• As part of a standards setting activity

Yes  No

If yes, describe the activity

• Other persons not employed by IBM

Yes  No

If yes, describe the activity

If Yes is answered to any of the above, please provide information sufficient to identify the activity (e.g., government contract number, company name, project name, alliance name, name of other party, client services principal, technical coordinator, etc.)

\* 11. Have you ever disclosed your invention to anyone outside IBM, or do you plan to do so in the future?

Yes  No

If Yes, please tell us whether the disclosure was (or will be) made, how made (or to be made), and whether or not there was (or is) a confidential disclosure agreement (CDA) in place covering the disclosure:

\* 12. Is your invention one which can be offered either directly as a service by IBM or our competitors or which could improve a service offering offered by IBM or our competitors?

Yes  No

If Yes, please explain your answer:

\* 13. If the invention relates to a product or service that is outside the scope of your business unit, please

recommend IBM business unit(s), IBM location(s) or individual(s) within IBM that you think would provide a competent evaluation of your invention:

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Final Evaluation Questions

A. Threshold Questions

1. Operability - Is implementation of the invention possible?

Yes

Reasons for above answer:

2. Novelty- Are one or more concept(s) of the invention novel over what is already known in the literature, existing commercial products, patents, and earlier IBM Invention disclosures?

Yes

Reasons for above answer:

B. Valuation Questions

1. Adequacy of description:

Clear and complete as is

Reasons for answer:

2. Technical contribution of invention:

Minor addition to known technology

Reasons for above answer:

3. Describe the problem solved/benefit provided and the implementation cost of the invention compared to existing or reasonably expected alternatives:

Significant problem/substantial benefit - minor implementation cost

4. Are any alternatives to the invention available to those wishing to avoid its use?

Alternatives have drawbacks

5. Describe the likelihood of use of the invention (answer each):

IBM's customers? Probable

IBM's suppliers/vendors? Probable

IBM's competitors? Probable

IBM? Probable

Reasons for above answer:

6. What % of third party products in the technical field will likely contain the invention?

< 25%

7. How long is the invention likely to be used in products by IBM or others?

5-10 years

8. How easily can use of the invention by a third party be detected?

Trivially; without purchase of product; e.g.; by reading product literature

Reasons for the above answer, including description of how use could be detected:

Evaluation

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This team evaluation was entered by Georgia Brundage/Endicott/IBM on 05/29/2003

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What is the team's evaluation of this disclosure? Search

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Date evaluated : 05/29/2003

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Evaluation comments

Final Evaluation History Search	Who made the final evaluation Georgia Brundage/Endicott/IBM	Final evaluation date 5/29/2003
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### Search Information

Date sent: 05/30/2003	*Target completion date: 06/16/2003	Search results received date: 06/18/2003
Who was the search sent to (This area is to designate a Local Searcher name or WAIPL): WAIPL		
*Search type: <input checked="" type="checkbox"/> Patentability <input type="checkbox"/> Clearance <input type="checkbox"/> Validity <input type="checkbox"/> State of Art		
*Features to be searched: PLEASE SEND 2 COPIES OF SEARCH REPORT AND REFERENCES		

Occasionally a server runs out of virtual memory and hangs. According to the prior art, the server can be rebooted manually, but this is time consuming. According to the present invention, there is a small program that continually runs (and has little memory requirements) and listens for a TCP/IP ping. When the server hangs, an operator at another, remote server sends the TCP/IP ping (including a data packet). The small program responds to the ping and data packet by automatically making a system call to reboot or power off the server.

Please see the Invention Disclosure for further details.

### Search Office Information

Target completion date: 06/16/2003	<input type="checkbox"/> Search has been delayed	Ship/Return date: 06/17/2003
Search conducted by Brundage		
Comments		

### Final Decision

This decision was entered by Georgia Brundage/Endicott/IBM on 07/14/2003	
Decision: File	Status: N/A
PPM area: 600 - Software/Services/Applications/Solutions	
Date of final decision : 07/08/2003	

### Additional filing information

Planned Filing date:

Filing comments:

### Additional decision comments

### Final Decision History

Entered on 14-Jul-2003 by Georgia Brundage  
File N/A 8-Jul-2003 Docket Family: END920030054

### Post Disclosure Text & Drawings

To add additional information related to this disclosure once it has been submitted, click the action button below and a new document will be opened for you to enter the new information. To view existing post disclosure information, double-click on the item in the list below (if there has been additional information entered), and the document will open for you to view.

Form Revised (05/28/03)

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